Week 5

This week was spent trying to prepare for the presentation due at the end of the week. Unfortunately, difficulties came up that made the original plan to implement the program on a raspberry pi unfeasible for the time being.

After much struggle, eventually I was able to implement JT’s program onto the raspberry pi. The main issue revolved around the use of librosa – specifically, each version of librosa required a specific set of other dependencies – some of which are not available on the raspberry pi. To cope, it was necessary to figure out how to download older versions of librosa and other dependencies in order to run the program.

On a side note, due to my reckless attempts to get the dependencies installed, I may have broken some critical packages on the raspberry pi beyond repair. Notably, pip3 has been compromised in such a way that it doesn’t recognize the sudo command anymore. The raspberry pi therefore would probably need a factory reset and I would have to reinstall all packages once again.

In any case, I’ve managed to get JT’s program to run. Unfortunately, it turns out that his program uses too much memory for the Raspberry Pi to handle. Even when given most of the memory to work with, the program eventually throws a memory error. Only after running everything on my own computer instead did I realize that the memory used by the program was about 2.5 GB, a good 1.5 GB more than the maximum capacity of the raspberry pi.

In attempting to get the program working on my computer, I decided to install everything using a virtual environment – I didn’t want to wreck my computer with package installations as well. It worked out far better besides the experience of trying to install PyQt4 onto the virtual environment. That required some fiddling with installing source packages, running makefiles, and dragging them into the virtualenv folders. It would’ve been preferable to just use pip for everything but PyQt4 was not supported by python3 pip any longer. Instead, they support PyQt5, which turned to be completely incompatible with PyQt4.

Besides that, I also worked on a preliminary program to play the wav file generated by JT’s program with keyboard input. Specifically, the setup was to connect the keyboard to the computer via a usb cable, then use the inputs to play sound out using a python file. I chose to use the pyaudio module to set this up and succeeded in running a script that processed one specific note played, which outputted the wav file.